



Making the Most of the Quiz Feature: More than Multiple Guess Ruth Kinder, The Ohio State University at Lima

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The Quiz feature within D2L can be used for assessment but, perhaps more significantly, also for individualized student learning assistance. Individualized learning assistance is especially necessary for courses which have either limited opportunities for individual questions and answers (such as very large lecture sections), courses which are flexibly paced, and courses which have a significant online off-campus component. The topic presentations listed below provide suggestions to make the most of the learning assistance role of the quiz feature.

Annotated Topic Presentations List (*top three*)

Using Feedback for Learning

Take the quiz tool beyond assessment; let the D2L quizzing tool help students learn. Providing corrective and reinforcing immediate feedback beyond “right” and “wrong” will provide a continuous learning environment for your students. Teaching experience and subject familiarity allows an instructor to predict sticking points and potential muddled thinking; general feedback can be written in advance to cover most of these eventualities and thus a student can receive powerful reinforcement for correct applications of course concepts and corrective direction for likely misapplications.

Submission View Selection

Consider the different possible submission views with an eye to generating the learning experience you want your students to have. Sometimes the better choice is to suppress direct marks of “right” or “wrong” in favor of reading feedback thoroughly. Providing response cues only after one or more attempts is also sometimes a good strategy.

***Using Regular Expressions ***

Help the D2L quizzing tool use your judgment! You can have flexibility in scoring without constant manual effort. With practice you can construct regular expressions to assign full and partial credit to a variety of flexible responses for open-ended question forms (Fill in the Blank and Short Answer). Eventually, the expressions can become elegant. Regular expressions can save hours of manual grading and help provide timely feedback to students immediately and automatically. (See also “Selecting Question Styles”)



More ways to make the most of the quiz feature

Using Random Question Sections

Mix it up so that students have a variety of experiences to cope with and get a better exposure to the scope of the content. Random groups of related questions can be used to provide a challenging learning experience.

Using Color for Emphasis and to Cue

Consider using colored text to direct attention to feedback and information or to group types of text. Colored text may help direct students to what must be read.

Conditional Release

Control when students have access to specific events to encourage completion in a precise order, or at a desired level, and to minimize an overwhelming list of available events. But, beware of placing too many conditions!

Limited and Unlimited Attempts

Control the number of times a student may, or must, try an event to encourage mastery in various ways. Consider scoring choices ranging between “highest”, “average”, and “last”.

Using Images

Add images for a whole new level and style of question! (Sound and video are also possible.)

Selecting Question Styles

Make it more than multiple guess; using the more open-ended question types such as FIB and SA addresses other aspects of learning. (See also “Using Regular Expressions”)



Using Feedback for Enhancing Learning

Students in both traditional lecture sections and the blended (hybrid) elementary courses at Ohio State Lima mention the extensive feedback and varied style of questions used in practices and quizzes as a major component of their learning experience. Students in general chemistry courses are also exposed to some of the same techniques and have much the same response. An essential feature of all concept and skill practice and scored items in these courses is the extensive and immediate built-in feedback enabling the learner to correct misassumptions and reinforce accurate information right away. Even in a practice situation, beginning students may become discouraged with totally right or totally wrong style scoring; and, multiple choice questions often tend to provide too much cueing allowing the student to use a guessing style which is more about test-taking skill than knowledge or concept application. The D2L Quiz Tool provides numerous ways to provide effective immediate feedback to increase the learning (in addition to improving the assessment experience for the students).

Effective feedback is much more than “right” and “wrong”! An instructor can use their experience base and familiarity with the course content to pre-explain concepts and applications in the form of general or specific feedback made available at the individual question level. Specific feedback is associated with only one response choice and appears only if that response is selected. General feedback refers to feedback which relates to the entire question and appears regardless of which response is selected. Color can enhance how the text feedback is interpreted, and choice of submission view options can strongly alter the experience of looking over a completed activity for a student.

Example: Assume you are a student who has been studying intro chemistry and learning how to interpret all the sub and superscripts attached to symbols for elements and groups of elements.

Question: Matter comes in many forms. All the symbol sets shown ARE real matter. Which of the following represent compounds? {Select ALL}

S_8 PO_4^{3-} N_2O NO_3^- O_2 Ca KNO_2

N_2O and KNO_2 are the correct responses to this.



Feedback and Submission Views to Consider

- show overall score only, no feedback
- show individual question score and overall score, no feedback
- show built-in answer symbols (x and \checkmark) and question scores and overall score; only feedback is x and \checkmark
- show brief specific feedback and question scores and overall score
- show general feedback and built-in answer symbols (x and \checkmark) and question scores and overall score
- **show general feedback and question scores and overall score**
- show general feedback and specific feedback and built-in answer symbols (x and \checkmark) and question scores and overall score
- show general feedback and specific feedback and question scores and overall score
- **personal favorite style for most uses; show general feedback (sometimes coupled to specific feedback) with question and overall scores; use color to cue to implications of various feedback text**

Suggestions for Generating Effective Feedback

- ✓ Use general feedback to enhance learning by providing your students with immediate reinforcing or corrective information. Use your experience base to give that same assistance you might when students ask face-to-face questions or seem confused in a classroom setting.
- ✓ Remove all view options which complicate or confuse the feedback.
- ✓ Consider adding response specific, carefully worded feedback, to enhance the general feedback.
- ✓ Try consistently colored text to aid in student interpretation of the feedback.
- ✓ Convince your students that reading the feedback, even when they answer a question correctly, is valuable to them as a learning tool!



Submission View Selection

The D2L Quiz tool allows for some customization of the view of the results a student will see following submission. Different goals are better served by specific submission view choices.

Sometimes it is appropriate to provide only a score; for example, following a Pre-Course Content Check it will not really be useful for a student to review the questions and the correct answers since this event was used only to measure their entering knowledge base.

Sometimes it is appropriate to let the built-in red x and green √ indicate which responses are correct and which are incorrect. However, the symbols are not universal and can even cause student confusion on multiple select questions. Consider suppressing this in favor of general (or specific) feedback which will clearly indicate what is a correct response and which are incorrect when read thoroughly. The feedback should reinforce those who were correct (even if they guessed) in a manner which adds to their grasp of the content and correct those who were wrong in a manner which allows them to increase what they know.

Sometimes it can be appropriate to change the submission view following a specific number of attempts, or achievement of a specific score. Moving from score only to complete feedback views can be motivating to the student. Be sure to Preview a quiz after setting the submission view to be sure you have achieved your goal!

personal favorite style for most uses; show general feedback (sometimes coupled to specific feedback) with question and overall scores; use color to cue to implications of various feedback text

Suggestions for Submission View Selection

- ✓ Make a conscious and informed decision about the submission view(s) you select (What is the goal of the event? Some views support assessment and others support learning.)
- ✓ Consider **NOT** giving students a **quick way** to assess whether they were correct or incorrect; encourage them to think about their responses and read feedback thoroughly to determine what they seem to know and still need to learn (see Using Feedback)
- ✓ Remember that different views can be enabled following specific achievement levels, or a certain number of attempts



Using Regular Expressions

What does a Regular Expression do inside D2L quizzing?

These codes cause the built in regular expression engine to read through a short answer or fill-in-the-blank response in very specific ways and make a match to all, a portion, or no match at all.

Credit can then be assigned based on the level or amount of match.

Some common uses and applications

- Allow for plural and singular forms of words
- Allow for upper and lower case (or specify only one)
- Find specific words or numbers; or a list of words (or numbers) in a specific order
- Allow for some spelling errors
- Conjugation of verbs
- Naming skills in many types of languages and fields
- Test western alphabet name to native language characters

What matters when writing a regular expression to use in D2L?

The specific characters or symbols used

The order of possible matches described

The searching operation requested

It is important to **test the expressions!!!**

Expressions will do exactly what you construct, but you may not have constructed what you think you did!

Some common pitfalls

- Ambiguous questions
- Misuse of wildcards causing too many or too few matches
- Neglect of order in possible matches (must be from most to least correct)
- Overly complex, or inefficient expressions (sometimes it is worth working to minimize the effort required by the engine)
- Looping expressions (be sure to give the engine a way out!)

Additional Detail to Check

- ✓ Inside Quiz remember to check the box for “regular expression”
- ✓ Different weights may be assigned for partial credit (order must be from best to worst)
- ✓ Suppress “Show Answers” on Submission Views or students who are incorrect will see the regular expression and become very confused! Use the comment area for prewritten feedback instead!



Regular Expression Dictionary (Some Symbols and Syntax)

symbol	basic meaning or use	samples or comments	
^	matches the start of a string	^give will match give but not forgive	
\$	matches the end of a string	give\$ will match forgive and give but not forgiven or “they will give it to them”	
	Or		
[]	enclosed will be a list of <u>individual</u> possible characters	[ado] will match to a OR d OR o in any order or position	
()	enclosed will be a <u>set</u> of literal characters	(ado) will match ado in ado , adobe , adore , Colorado	
(?:	match, but do not capture or store	(?:ado) will match ado in ado adobe adore Colorado but does not capture or store it for later	
\b	match at a word or digit boundary on this end	(ado\b) will match ado and Colorado , but not adobe and adore ; give\b will match forgive , give , and “ give it to them”, but not forgiven ; \bgive will not match forgiven , but will match “they will give it”.	
{ }	quantifier	{n,m} as {2,4} means repeat the previous at least two times and no more than four times	
*	Repeat the previous zero or more times (<i>greedy</i>)	Greedy (matches the most items before trying the least); usually a waste of the engine’s “time” Lazy (matches the least items before trying the most); would often match faster and more efficiently	
+	Repeat the previous once or more times (<i>greedy</i>)		
*?	Lazy form of *		
+?	Lazy form of +		
\	escapes the literal meaning of a character		
	\b represents a word boundary (rather than a literal b)		
	\s represents a white-space		
	\d represents a digit between 0 and 9;		
	\w represents any letter or digit		
\.	\. represents a decimal since . is a wildcard representing almost any character		



Should be a 100% response 2,3-Dimethyl-3-octene
 BUT since the code didn't allow for any upper case, it would score at only 60%...
 this could/should be fixed in the code! 2,3-[Dd]imethyl-3-octene\$ is a start
 2,3-[Dd]imethyl-3-[Oo]ctene\$ might be better

Example 2b (same name; POOR order of responses for partial credit)

2,3-dimethyl-3-octene at 100%
 ene\$ partial credit at 40%
 octene\$ partial credit at 60%

an entry of 2,3-dimethyl-3-octene will give 40% due to the order of selections even if the whole term octene is present in the response.

The engine is eager to make a match and will try these in order from top to bottom stopping at the first positive match!

Make the original even better?

Allow for whitespace between the 2 and , and – and 3?
 Might be reasonable to do.. 2\s,\s3\s-\sdimethyl\s etc
 But \s *REQUIRES* a space.... Use \s* and it can be zero or more spaces!
 2 whitespaces, 3...when does it stop? use {n,m} to dictate how many spaces!

Want to give some credit for including “methyl”...you could...but again... where does it stop?

Example Set 3 (Names and Symbols)

Symbol for the element copper? Cu

[C][u]\$ or Cu\$ takes only Cu, case sensitive option also solves this now
 Cu\b takes any phrase with Cu in it as a separate term

Name of the element with the symbol Cu?

[Cc]opper\$ takes Copper or copper
 [Cc]opper without the \$ might take copper chloride...using \b would allow for additional terms and is not necessarily a desirable change here (copper chloride would be correct with [Cc]opper\b, but it isn't a proper response!



Example Set 4 (Word Searches within phrases or paragraphs)

Sometimes you want only one word, but if space allows students will enter a whole sentence (or vice versa!). For example, I might want something simple like "salt" and the student will type in "It is salt". One way to cope with this is

```
\bsalt\b
```

This will take the word salt wherever it finds it and it doesn't matter what is around it...but saltwater would not be accepted (no boundary after the t of salt!). Caution: If they type "It is not salt" this would be scored as correct with this simple expression!

Looking for any term in a collection of terms

```
\w*[E|e]levate\w*|\w*[W|w]eight\w*|\w*[S|s]moking\w*|\w*[A|a]lcohol\w*[C|c]lothes\w*|\w*[L|l]oosen\w*|\w*[C|c]lothing\w*|\w*[L|l]oose\w*
```

This one allowed whole paragraphs about non-medication based steps to take to control high bp: Will accept any of the terms elevate, weight, smoking, alcohol, clothes, loosen, clothing, loose, the assumption is that these are likely to be used with correct other terms as in “elevate legs”

Example Set 6 (Numbers)

Calculate the mass of 456 mL of ethanol, if the density of ethanol is known to be 0.781 g/mL. Report your answer using significant figures well. (raw answer is 357.015: should be reported as 357 to 3 digits)

`^357$` accepts only 357 for full credit

`^35[4-9]$` accepts any whole number between 354 and 359 for partial credit

`^357\.{1}` accepts any decimal number which starts with 357 the `\.{1}` demands one decimal dot (357.0, 357.1, 357.234 etc) for partial credit

Example Set 7 (Words Related to Numbers)

```
\bsalt\b.*?\b(5|6|17|18|20|21|22|23|33)\b\b(5|6|17|18|20|21|22|23|33).*\b
```

This would match any **use of the word salt and one of the listed numbers in either order**

“My unknown is number **17** and it is table **salt**.” a match

“**Salt** is my unknown and it is number **22**.” no match, WHY?

oops....Salt is not indicated (only salt)! `\b[Ss]alt\b`



Example Set 8 : (Numerical Value Matching with Varying Degrees of Certainty Required)

`^[0]{0,1}?\.{1}[1-3]{1}[0-9]{3}?$` **This specific one is great to match any value between 0.1000 and 0.3999 and ONLY those to .xxxx with or without the leading 0 showing!** I use the style to pre-score predictable magnitude and precision reported as lab data.

`^` starting at the beginning of the string `[0]{0,1}` Look for a 0 either no times or once
`?` Don't bother to capture it for later `\.{1}` let there be a decimal point once here `[1-3]{1}` followed directly by a 1, 2, or 3 once

This gets us to any of 0.1 0.2 0.3 .1 .2 .3

`[0-9]{3}` with 3 more digits only and each of these may be any digit between 0 and 9

`?` Don't bother to capture it for later

`$` end the number string now

Accepts only entries like these: 0.1000 to 0.3999 or .1000 to .3999

Will not take .100 or .32 for full credit (but these could be coded for partial credit)

Useful closing the loop expressions:

Searching for any sort of number

Use `\d*?` at 0 points, 0% to let the engine have a way out as long as there is any number entered at all (even if it is a crazy, no point earning number!)

Searching for any sort of word OR number:

Use `\w*?` at 0 points, 0% to let the engine have a way out as long as there is any letter OR number entered at all (even if it is a crazy, no point earning number or letter!)

Useful Regular Expression Resources

RegexBuddy software (real time translator, tutor, and tester, very effective inexpensive software which highlights and translates as you try to code) <http://www.regexbuddy.com>

for demos, tutorials, and download

Tutorials and libraries and testers

<http://www.regular-expressions.info/>

<http://regexlib.com/default.aspx>

D2L Document "Using Regular Expressions in the D2L Quizzing Tool" may be found by logging in to the D2L Community under "Documentation" and then "Quizzes"

<https://community.desire2learn.com>